

On page 53, line 34, please delete "NO:27" and insert in its place --NO:24--.

On page 59, line 22, please delete "NO:25" and insert in its place --NO:22--.

On page 59, line 23, please delete "NO:26" and insert in its place --NO:23--.

On page 59, line 26, please delete "NO:27" and insert in its place --NO:24--.

**In the Sequence Listing:**

Please enter the Sequence Listing submitted herewith into the application in accordance with 37 C.F.R. § 1.77.

**In the Claims:**

Please amend the claims as follows:

Please cancel Claims 1-18 without prejudice.

Please add new Claims 24 -159, as follows:

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- ✓ -- 24. (New) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:
- (a) a nucleotide sequence encoding amino acid residues 1 to 300 of SEQ ID NO:2;
  - (b) a nucleotide sequence encoding amino acid residues 2 to 300 of SEQ ID NO:2;
  - (c) a nucleotide sequence encoding amino acid residues 31 to 300 of SEQ ID NO:2;
  - (d) a nucleotide sequence encoding amino acid residues 31 to 283 of SEQ ID NO:2; and
  - (e) a nucleotide sequence that is the complement of (a), (b), (c), or (d).

25. (New) The nucleic acid molecule of claim 24 comprising a nucleotide sequence according to (a).

26. (New) The nucleic acid molecule of claim 24 comprising a nucleotide sequence according to (b).

27. (New) The nucleic acid molecule of claim 24, comprising a nucleotide sequence according to (c).

28. (New) The nucleic acid molecule of claim 24, comprising a nucleotide sequence according to (d).

29. (New) The nucleic acid molecule of claim 24, comprising a nucleotide sequence according to (e).

30. (New) The nucleic acid molecule of claim 25, comprising nucleotides 25 to 924 of SEQ ID NO:1.

*See D1*  
31. (New) The nucleic acid molecule of claim 24, comprising a nucleotide sequence heterologous to SEQ ID NO:1.

32. (New) The nucleic acid molecule of claim 31, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to SEQ ID NO:2.

33. (New) The nucleic acid molecule of claim 32, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

34. (New) A recombinant vector comprising the nucleic acid molecule of claim 24.

35. (New) The recombinant vector of claim 34, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

36. (New) A recombinant host cell comprising the vector of claim 34.

37. (New) A recombinant host cell comprising the nucleic acid molecule of claim 24 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

38. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 24(a)-(d), comprising:

(a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and

(b) recovering said polypeptide from the culture.

39. (New) A composition comprising the nucleic acid molecule of claim 24 and a pharmaceutically acceptable carrier.

✓ 40. (New) An isolated nucleic acid molecule comprising a nucleotide sequence encoding a first amino acid sequence at least 90% identical to the entire length of a second amino acid sequence selected from the group consisting of:

- sub  
C2
- (a) amino acid residues 1 to 300 of SEQ ID NO:2;
  - (b) amino acid residues 2 to 300 of SEQ ID NO:2;
  - (c) amino acid residues 31 to 300 of SEQ ID NO:2; and
  - (d) amino acid residues 31 to 283 of SEQ ID NO:2;

wherein % identity is determined using the Bestfit program.

41. (New) The nucleic acid molecule of claim 40 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (a).

42. (New) The nucleic acid molecule of claim 40 encoding a first amino acid sequence at least 90% identical to an amino acid sequence according to (b).

43. (New) The nucleic acid molecule of claim 40 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (c).

44. (New) The nucleic acid molecule of claim 40 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (d).

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B1

~~45. (New) The nucleic acid molecule of claim 44 encoding a first amino acid sequence at least 95% identical to a second amino acid sequence according to (d).~~

46. (New) An isolated nucleic acid molecule comprising the complement of the nucleotide sequence of claim 40.

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~~47. (New) The nucleic acid molecule of claim 44 that comprises a nucleotide sequence heterologous to SEQ ID NO:1.~~

48. (New) The nucleic acid molecule of claim 47, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to SEQ ID NO:2.

49. (New) The nucleic acid molecule of claim 48, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

~~Sub B3~~ 50. (New) A recombinant vector comprising the nucleic acid molecule of claim 44.

51. (New) The recombinant vector of claim 50, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

52. (New) A recombinant host cell comprising the vector of claim 50.

~~Sub B4~~ 53. (New) A recombinant host cell comprising the nucleic acid molecule of claim 44 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

54. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 44 comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

55. (New) A composition comprising the nucleic acid molecule of claim 44 and a pharmaceutically acceptable carrier.

~~Sub D3~~ 56. (New) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding the full-length polypeptide encoded by the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810;
- (b) a nucleotide sequence encoding the full-length polypeptide, lacking the N-terminal methionine, which is encoded by the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810;
- (c) a nucleotide sequence encoding the mature polypeptide encoded by the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810;
- (d) a nucleotide sequence encoding the soluble extracellular domain encoded by the cDNA contained in clone HPHA52 or clone HTPCH84 as deposited with the ATCC as accession number 97810, respectively; and

(e) a nucleotide sequence that is the complement of (a), (b), (c), or (d).

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57. (New) The nucleic acid molecule of claim 56 comprising a nucleotide sequence according to (a).

58. (New) The nucleic acid molecule of claim 56 comprising a nucleotide sequence according to (b).

59. (New) The nucleic acid molecule of claim 56 comprising a nucleotide sequence according to (c).

60. (New) The nucleic acid molecule of claim 56 comprising a nucleotide sequence according to (d).

61. (New) The nucleic acid molecule of claim 56 comprising a nucleotide sequence according to (e).

62. (New) The nucleic acid molecule of claim 59 comprising the nucleotide sequence of the cDNA that encodes the mature polypeptide encoded by clone HPHA52, which clone was deposited with the ATCC as accession number 97810.

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*Sub 04* 63. (New) The nucleic acid molecule of claim 59 comprising a nucleotide sequence heterologous to the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810;

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64. (New) The nucleic acid molecule of claim 63, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to the polypeptide encoded by the cDNA contained in clone HPHA52, which clone was deposited with the ATCC as accession number 97810.

65. (New) The nucleic acid molecule of claim 64, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

66. (New) A recombinant vector comprising the nucleic acid molecule of claim 59.

67. (New) The recombinant vector of claim 66, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

68. (New) A recombinant host cell comprising the vector of claim 66.

69. (New) A recombinant host cell comprising the nucleic acid molecule of claim 59 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

70. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 59, comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

71. (New) A composition comprising the nucleic acid molecule of claim 59 and a pharmaceutically acceptable carrier.

72. (New) An isolated nucleic acid molecule comprising a nucleotide sequence encoding a first amino acid sequence at least 90% identical to the entire length of a second amino acid sequence selected from the group consisting of:

- a) the amino acid sequence of the full-length polypeptide encoded by the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810;
- b) the amino acid sequence of the full-length polypeptide, lacking the N-terminal methionine, which is encoded by the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810;
- c) the amino acid sequence of the mature polypeptide encoded by the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810; and
- d) the amino acid sequence of the soluble extracellular domain of the polypeptide encoded by the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810;

wherein % identity is determined using the Bestfit program.

73. (New) The nucleic acid molecule of claim 72 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (a).

74. (New) The nucleic acid molecule of claim 72 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (b).

75. (New) The nucleic acid molecule of claim 72 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (c).

76. (New) The nucleic acid molecule of claim 72 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (d).

77. (New) The nucleic acid molecule of claim 75 encoding a first amino acid sequence at least 95% identical to a second amino acid sequence according to (c).

78. (New) An isolated nucleic acid molecule comprising the complement of the nucleotide sequence of claim 72.

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*Sub D5* 79. (New) The nucleic acid molecule of claim 75 that comprises a nucleotide sequence heterologous to the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810.

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80. (New) The nucleic acid molecule of claim 79, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to the polypeptide encoded by the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810.

81. (New) The nucleic acid molecule of claim 80, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

82. (New) A recombinant vector comprising the nucleic acid molecule of claim 75.

83. (New) The recombinant vector of claim 82, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

84. (New) A recombinant host cell comprising the vector of claim 82.

85. (New) A recombinant host cell comprising the nucleic acid molecule of claim 75 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

86. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 75 comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

87. (New) A composition comprising the nucleic acid molecule of 75 and a pharmaceutically acceptable carrier.

/ 88. (New) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding amino acid residues m-300 of SEQ ID NO:2, where m is an integer in the range of 1 to 49;
- (b) a nucleotide sequence encoding amino acid residues 1-y of SEQ ID NO:2, where y is an integer in the range of 193 to 300;
- (c) a nucleotide sequence encoding amino acid residues m-y of SEQ ID NO:2, where m is an integer in the range of 1 to 49 and y is an integer in the range of 193 to 300; and
- (d) a nucleotide sequence that is the complement of (a), (b), or (c)

89. (New) The nucleic acid molecule of claim 88 comprising a nucleotide sequence according to (a).

90. (New) The nucleic acid molecule of claim 88 comprising a nucleotide sequence according to (b).

91. (New) The nucleic acid molecule of claim 88 comprising a nucleotide sequence according to (c).

92. (New) The nucleic acid molecule of claim 88 comprising a nucleotide sequence according to (d).

93. (New) The nucleic acid molecule of claim 88 wherein the nucleotide sequence encodes amino acid residues 49 to 300 of SEQ ID NO:2.



94. (New) The nucleic acid molecule of claim 88 wherein the nucleotide sequence encodes amino acid residues 1 to 193 of SEQ ID NO:2.

*Sub D6*  
95. The nucleic acid molecule of claim 88 comprising a nucleotide sequence heterologous to SEQ ID NO:1.

96. (New) The nucleic acid molecule of claim 95, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to SEQ ID NO:2.

97. (New) The nucleic acid molecule of claim 96, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

98. (New) A recombinant vector comprising the nucleic acid molecule of claim 88.

99. (New) The recombinant vector of claim 98, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

100. (New) A recombinant host cell comprising the vector of claim 98.

101. (New) A recombinant host cell comprising the nucleic acid molecule of claim 88 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

102. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 88(a)-(c), comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

103. (New) A composition comprising the nucleic acid molecule of claim 88 and a pharmaceutically acceptable carrier.

*Sub C9*  
104. (New) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding a polypeptide comprising a portion of the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit 97810

wherein said portion excludes up to 48 amino acids from the amino terminus of the complete amino acid sequence;

(b) a nucleotide sequence encoding a polypeptide comprising a portion of the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit 97810 wherein said portion excludes up to 107 amino acids from the carboxy terminus of the complete amino acid sequence;

(c) a nucleotide sequence encoding a polypeptide comprising a portion of the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit 97810 wherein said portion excludes up to 48 amino acids from the amino terminus and up to 107 amino acids from the carboxy terminus of the complete amino acid sequence; and

(d) a nucleotide sequence that is the complement of (a), (b), or (c).

105. (New) The nucleic acid molecule of claim 104 comprising a nucleotide sequence according to (a).

106. (New) The nucleic acid molecule of claim 104 comprising a nucleotide sequence according to (b).

107. (New) The nucleic acid molecule of claim 104 comprising a nucleotide sequence according to (c).

108. (New) The nucleic acid molecule of claim 104 comprising a nucleotide sequence according to (d).

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*Sub D7* 109. (New) The nucleic acid molecule of claim 104 comprising a nucleotide sequence heterologous to said cDNA clone.

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110. (New) The nucleic acid molecule of claim 109, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to the polypeptide encoded by said cDNA clone.

111. (New) The nucleic acid molecule of claim 110, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

112. (New) A recombinant vector comprising the nucleic acid molecule of claim 104.

113. (New) The recombinant vector of claim 112, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

114. (New) A recombinant host cell comprising the vector of claim 112.

115. (New) A recombinant host cell comprising the nucleic acid molecule of claim 104 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

116. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 104(a)-(c), comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

117. (New) A composition comprising the nucleic acid molecule of claim 104 and a pharmaceutically acceptable carrier.

✓ 118. (New) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding amino acid residues 31 to 46 of SEQ ID NO:2;
- (b) a nucleotide sequence encoding amino acid residues 57 to 117 of SEQ ID NO:2;
- (c) a nucleotide sequence encoding amino acid residues 132 to 175 of SEQ ID NO:2;
- (d) a nucleotide sequence encoding amino acid residues 185 to 194 of SEQ ID NO:2;
- (e) a nucleotide sequence encoding amino acid residues 205 to 217 of SEQ ID NO:2;

- (f) a nucleotide sequence encoding amino acid residues 239 to 264 of SEQ ID NO:2;
- (g) a nucleotide sequence encoding amino acid residues 283 to 298 of SEQ ID NO:2; and
- (h) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), (c), (d), (e), (f), or (g).

119. (New) The nucleic acid molecule of claim 118 comprising a nucleotide sequence according to (a).

120. (New) The nucleic acid molecule of claim 118 comprising a nucleotide sequence according to (b).

121. (New) The nucleic acid molecule of claim 118 comprising a nucleotide sequence according to (c).

122. (New) The nucleic acid molecule of claim 118 comprising a nucleotide sequence according to (d).

123. (New) The nucleic acid molecule of claim 118 comprising a nucleotide sequence according to (e).

124. (New) The nucleic acid molecule of claim 118 comprising a nucleotide sequence according to (f).

125. (New) The nucleic acid molecule of claim 118 comprising a nucleotide sequence according to (g).

126. (New) The nucleic acid molecule of claim 118 comprising a nucleotide sequence according to (h).

127. (New) The nucleic acid molecule of claim 118 comprising a nucleotide sequence heterologous to SEQ ID NO:1.

128. (New) The nucleic acid molecule of claim 127, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to SEQ ID NO:2.

129. (New) The nucleic acid molecule of claim 128, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

130. (New) A recombinant vector comprising the nucleic acid molecule of claim 118.

131. (New) The recombinant vector of claim 130, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

132. (New) A recombinant host cell comprising the vector of claim 130.

133. (New) A recombinant host cell comprising the nucleic acid molecule of claim 118 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

134. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 118(a)-(g), comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

135. (New) A composition comprising the nucleic acid molecule of claim 118 and a pharmaceutically acceptable carrier.

✓ 136. (New) An isolated nucleic acid molecule comprising a nucleotide sequence encoding at least 30 contiguous amino acids of SEQ ID NO:2.

137. (New) The nucleic acid molecule of claim 136 wherein the nucleotide sequence encodes at least 50 contiguous amino acids of SEQ ID NO:2.

✓ 138. (New) An isolated nucleic acid molecule comprising a nucleotide sequence encoding at least 30 contiguous amino acids of the amino acid residues 31-283 of SEQ ID NO:2.

139. (New) The nucleic acid molecule of claim 138 wherein the nucleotide sequence further comprises a nucleotide sequence heterologous to SEQ ID NO:1.

140. (New) The nucleic acid molecule of claim 139, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to SEQ ID NO:2.

141. (New) The nucleic acid molecule of claim 140, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

142. (New) A recombinant vector comprising the nucleic acid molecule of claim 138.

143. (New) The recombinant vector of claim 142, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

144. (New) A recombinant host cell comprising the vector of claim 142.

145. (New) A recombinant host cell comprising the nucleic acid molecule of claim 138 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

146. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 138, comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

147. (New) A composition comprising the nucleic acid molecule of claim 138 and a pharmaceutically acceptable carrier.

148. (New) An isolated nucleic acid molecule comprising a nucleotide sequence encoding at least 30 contiguous amino acids of the complete amino acid sequence encoded by the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810.

149. (New) The nucleic acid molecule of claim 148 wherein the nucleotide sequence encodes at least 50 contiguous amino acids of said amino acid sequence.

150. (New) An isolated nucleic acid molecule comprising a nucleotide sequence encoding at least 30 contiguous amino acids of the amino acid sequence of the mature polypeptide encoded by the cDNA contained in clone HPHA52 as deposited with the ATCC as accession number 97810.

151. (New) The nucleic acid molecule of claim 150 wherein the nucleotide sequence further comprises a nucleotide sequence heterologous to said cDNA.

152. (New) The nucleic acid molecule of claim 151, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to the polypeptide encoded by said cDNA.

153. (New) The nucleic acid molecule of claim 152, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

154. (New) A recombinant vector comprising the nucleic acid molecule of claim 150.

155. (New) The recombinant vector of claim 154, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

156. (New) A recombinant host cell comprising the vector of claim 154.

157. (New) A recombinant host cell comprising the nucleic acid molecule of claim 150 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

158. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 150, comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

159. (New) A composition comprising the nucleic acid molecule of claim 150 and a pharmaceutically acceptable carrier.

160. (New) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding amino acid 1 to 170 of SEQ ID NO:4;
- (b) a nucleotide sequence encoding amino acid residues 2 to 170 of SEQ ID NO:4;
- (c) a nucleotide sequence encoding amino acid residues 31 to 170 of SEQ ID NO:4;
- (d) a nucleotide sequence encoding amino acid residues 31 to 166 of SEQ ID NO:4; and
- (e) a nucleotide sequence that is the complement of (a), (b), (c), or (d).

161. (New) The nucleic acid molecule of claim 160 comprising a nucleotide sequence according to (a).

162. (New) The nucleic acid molecule of claim 160 comprising a nucleotide sequence according to (b).

163. (New) The nucleic acid molecule of claim 160 comprising a nucleotide sequence according to (c).

164. (New) The nucleic acid molecule of claim 160 comprising a nucleotide sequence according to (d).

165. (New) The nucleic acid molecule of claim 160 comprising a nucleotide sequence according to (e).

166. (New) The nucleic acid molecule of claim 161 comprising nucleotides 73 to 582 of SEQ ID NO:3.

167. (New) The nucleic acid molecule of claim 160 comprising a nucleotide sequence heterologous to SEQ ID NO:3.

168. (New) The nucleic acid molecule of claim 167, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to SEQ ID NO:4.

169. (New) The nucleic acid molecule of claim 168, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.



170. (New) A recombinant vector comprising the nucleic acid molecule of claim 160.
171. (New) The recombinant vector of claim 170, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.
172. (New) A recombinant host cell comprising the vector of claim 170.
173. (New) A recombinant host cell comprising the nucleic acid molecule of claim 160 operably associated with a regulatory element that controls expression of said nucleic acid molecule.
174. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 160(a)-(d), comprising:
- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
  - (b) recovering said polypeptide from the culture.
175. (New) A composition comprising the nucleic acid molecule of claim 160 and a pharmaceutically acceptable carrier.
- ✓ 176. (New) An isolated nucleic acid molecule comprising a nucleotide sequence encoding a first amino acid sequence at least 90% identical to the entire length of a second amino acid sequence selected from the group consisting of:
- (a) amino acid residues 1 to 170 of SEQ ID NO:4;
  - (b) amino acid residues 2 to 170 of SEQ ID NO:4;
  - (c) amino acid residues 31 to 170 of SEQ ID NO:4; and
  - (d) amino acid residues 31 to 166 of SEQ ID NO:4;
- wherein % identity is determined using the Bestfit program.
177. (New) The nucleic acid molecule of claim 176 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (a).
178. (New) The nucleic acid molecule of claim 176 encoding a first amino acid sequence at least 90% identical to a amino acid sequence according to (b).

179. (New) The nucleic acid molecule of claim 176 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (c).

180. (New) The nucleic acid molecule of claim 176 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (d).

181. (New) The nucleic acid molecule of claim 180 encoding a first amino acid sequence at least 95% identical to a second amino acid sequence according to (d).

182. (New) An isolated nucleic acid molecule comprising the complement of the nucleotide sequence of claim 176.

183. (New) The nucleic acid molecule of claim 180 that comprises a nucleotide sequence heterologous to SEQ ID NO:3.

184. (New) The nucleic acid molecule of claim 183, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to SEQ ID NO:4.

185. (New) The nucleic acid molecule of claim 184, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

186. (New) A recombinant vector comprising the nucleic acid molecule of claim 180.

187. (New) The recombinant vector of claim 186, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

188. (New) A recombinant host cell comprising the vector of claim 186.

189. (New) A recombinant host cell comprising the nucleic acid molecule of claim 180 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

190. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 180 comprising:

(a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and

(b) recovering said polypeptide from the culture.

191. (New) A composition comprising the nucleic acid molecule of claim 180 and a pharmaceutically acceptable carrier.

✓ 192. (New) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding the full-length polypeptide encoded by the cDNA contained in clone HTPCH84 as deposited with the ATCC as accession number 97809;

(b) a nucleotide sequence encoding the full-length polypeptide, lacking the N-terminal methionine, which is encoded by the cDNA contained in clone HTPCH84 as deposited with the ATCC as accession number 97809;

(c) a nucleotide sequence encoding the mature polypeptide encoded by the cDNA contained in clone HTPCH84 as deposited with the ATCC as accession number 97809;

(d) a nucleotide sequence encoding the soluble extracellular domain encoded by the cDNA contained in HTPCH84 as deposited with the ATCC as accession number 97809; and

(e) a nucleotide sequence that is the complement of (a), (b), (c), or (d).

193. (New) The nucleic acid molecule of claim 192 comprising a nucleotide sequence according to (a).

194. (New) The nucleic acid molecule of claim 192 comprising a nucleotide sequence according to (b).

195. (New) The nucleic acid molecule of claim 192 comprising a nucleotide sequence according to (c).

196. (New) The nucleic acid molecule of claim 192 comprising a nucleotide sequence according to (d).

197. (New) The nucleic acid molecule of claim 192 comprising a nucleotide sequence according to (e).

198. (New) The nucleic acid molecule of claim 195 comprising the nucleotide sequence of the cDNA that encodes the mature polypeptide encoded by clone HTPCH84, which clone was deposited with the ATCC as accession number 97809.

199. (New) The nucleic acid molecule of claim 195 comprising a nucleotide sequence heterologous to the cDNA contained in clone HTPCH84 as deposited with the ATCC as accession number 97809.

200. (New) The nucleic acid molecule of claim 199, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to the polypeptide encoded by the cDNA contained in clone HTPCH84, which clone was deposited with the ATCC as accession number 97809.

201. (New) The nucleic acid molecule of claim 200, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

202. (New) A recombinant vector comprising the nucleic acid molecule of claim 195.

203. (New) The recombinant vector of claim 202, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

204. (New) A recombinant host cell comprising the vector of claim 202.

205. (New) A recombinant host cell comprising the nucleic acid molecule of claim 195 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

206. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 195, comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

207. (New) A composition comprising the nucleic acid molecule of claim 195 and a pharmaceutically acceptable carrier.

✓ 208. (New) An isolated nucleic acid molecule comprising a nucleotide sequence encoding a first amino acid sequence at least 90% identical to the entire length of a second amino acid sequence selected from the group consisting of:

- (a) the amino acid sequence of the full-length polypeptide encoded by the cDNA contained in clone HTPCH84 as deposited with the ATCC as accession number 97809;
- (b) the amino acid sequence of the full-length polypeptide, lacking the N-terminal methionine, which is encoded by the cDNA contained in clone HTPCH84 as deposited with the ATCC as accession number 97809;
- (c) the amino acid sequence of the mature polypeptide encoded by the cDNA contained in clone HTPCH84 as deposited with the ATCC as accession number 97809; and
- (d) the amino acid sequence of the soluble extracellular domain of the polypeptide encoded by the cDNA contained in clone HTPCH84 as deposited with the ATCC as accession number 97809;
- wherein % identity is determined using the Bestfit program.

209. (New) The nucleic acid molecule of claim 208 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (a).

210. (New) The nucleic acid molecule of claim 208 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (b).

211. (New) The nucleic acid molecule of claim 208 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (c).

212. (New) The nucleic acid molecule of claim 208 encoding a first amino acid sequence at least 90% identical to a second amino acid sequence according to (d).

213. (New) The nucleic acid molecule of claim 211 encoding a first amino acid sequence 95% identical to a second amino acid sequence according to (c).

214. (New) An isolated nucleic acid molecule comprising the complement of the nucleotide sequence of claim 208.

215. (New) The nucleic acid molecule of claim 211 that comprises a nucleotide sequence heterologous to the cDNA contained in clone HTPCH84 as deposited with the ATCC as accession number 97809.

216. (New) The nucleic acid molecule of claim 215, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to the polypeptide encoded by the cDNA contained in clone HTPCH84 as deposited with the ATCC as accession number 97809.

217. (New) The nucleic acid molecule of claim 216, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

218. (New) A recombinant vector comprising the nucleic acid molecule of claim 211.

219. (New) The recombinant vector of claim 218, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

220. (New) A recombinant host cell comprising the vector of claim 218.

221. (New) A recombinant host cell comprising the nucleic acid molecule of claim 211 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

222. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 211 comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

223. (New) A composition comprising the nucleic acid molecule of 211 and a pharmaceutically acceptable carrier.

✓ 224. (New) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding amino acid residues n-170 of SEQ ID NO:4, where n is an integer in the range of 1 to 49;
- (b) a nucleotide sequence encoding amino acid residues 1-z of SEQ ID NO:4, where z is an integer in the range of 132 to 170;
- (c) a nucleotide sequence encoding amino acid residues n-z of SEQ ID NO:4, where n is an integer in the range of 1 to 49 and z is an integer in the range of 132 to 170; and
- (d) a nucleotide sequence that is the complement of (a), (b), or (c).

225. (New) The nucleic acid molecule of claim 224 comprising a nucleotide sequence according to (a).

226. (New) The nucleic acid molecule of claim 224 comprising a nucleotide sequence according to (b).

227. (New) The nucleic acid molecule of claim 224 comprising a nucleotide sequence according to (c).

228. (New) The nucleic acid molecule of claim 224 comprising a nucleotide sequence according to (d).

229. (New) The nucleic acid molecule of claim 224 wherein the nucleotide sequence encodes amino acid residues 49 to 170 of SEQ ID NO:4.

230. (New) The nucleic acid molecule of claim 224 wherein the nucleotide sequence encodes amino acid residues 1 to 132 of SEQ ID NO:4.

231. The nucleic acid molecule of claim 224 comprising a nucleotide sequence heterologous to SEQ ID NO:3.

232. (New) The nucleic acid molecule of claim 231, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to SEQ ID NO:4.

233. (New) The nucleic acid molecule of claim 232, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

234. (New) A recombinant vector comprising the nucleic acid molecule of claim 224.

235. (New) The recombinant vector of claim 234, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

236. (New) A recombinant host cell comprising the vector of claim 234.

237. (New) A recombinant host cell comprising the nucleic acid molecule of claim 224 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

238. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 224(a)-(c), comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

239. (New) A composition comprising the nucleic acid molecule of claim 224 and a pharmaceutically acceptable carrier.

240. (New) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

(a) a nucleotide sequence encoding a polypeptide comprising a portion of the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit 97809 wherein said portion excludes up to 48 amino acids from the amino terminus of the complete amino acid sequence;

(b) a nucleotide sequence encoding a polypeptide comprising a portion of the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit 97809 wherein said portion excludes up to 38 amino acids from the carboxy terminus of the complete amino acid sequence;

(c) a nucleotide sequence encoding a polypeptide comprising a portion of the complete amino acid sequence encoded by the cDNA clone contained in ATCC Deposit 97809 wherein said portion excludes up to 48 amino acids from the amino terminus and up to 38 amino acids from the carboxy terminus of the complete amino acid sequence; and

(d) a nucleotide sequence that is the complement of (a), (b), or (c).

241. (New) The nucleic acid molecule of claim 240 comprising a nucleotide sequence according to (a).

242. (New) The nucleic acid molecule of claim 240 comprising a nucleotide sequence according to (b).

243. (New) The nucleic acid molecule of claim 240 comprising a nucleotide sequence according to (c).

244. (New) The nucleic acid molecule of claim 240 comprising a nucleotide sequence according to (d).



245. The nucleic acid molecule of claim 240 comprising a nucleotide sequence heterologous to said cDNA clone.

246. (New) The nucleic acid molecule of claim 245, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to the polypeptide encoded by said cDNA clone.

247. (New) The nucleic acid molecule of claim 246, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

248. (New) A recombinant vector comprising the nucleic acid molecule of claim 240.

249. (New) The recombinant vector of claim 248, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

250. (New) A recombinant host cell comprising the vector of claim 248.

251. (New) A recombinant host cell comprising the nucleic acid molecule of claim 240 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

252. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 240(a)-(c), comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

253. (New) A composition comprising the nucleic acid molecule of claim 240 and a pharmaceutically acceptable carrier.

✓ 254. (New) An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

- (a) a nucleotide sequence encoding amino acid residues 31 to 46 of SEQ ID NO:4;

- NO:4;
- (b) a nucleotide sequence encoding amino acid residues 57 to 80 of SEQ ID
- NO:4;
- (c) a nucleotide sequence encoding amino acid residues 86 to 106 of SEQ ID
- NO:4;
- (d) a nucleotide sequence encoding amino acid residues 57 to 80 of SEQ ID
- NO:4;
- (e) a nucleotide sequence encoding amino acid residues 86 to 106 of SEQ ID
- NO:4;
- (f) a nucleotide sequence encoding amino acid residues 108 to 119 of SEQ ID
- NO:4;
- (g) a nucleotide sequence encoding amino acid residues 129 to 138 of SEQ ID
- NO:4;
- (h) a nucleotide sequence encoding amino acid residues 142 to 166 of SEQ ID
- NO:4; and
- (i) a nucleotide sequence complementary to any of the nucleotide sequences in (a), (b), (c), (d), (e), (f), (g), or (h) above.

255. (New) The nucleic acid molecule of claim 254 comprising a nucleotide sequence according to (a).

256. (New) The nucleic acid molecule of claim 254 comprising a nucleotide sequence according to (b).

257. (New) The nucleic acid molecule of claim 254 comprising a nucleotide sequence according to (c).

258. (New) The nucleic acid molecule of claim 254 comprising a nucleotide sequence according to (d).

259. (New) The nucleic acid molecule of claim 254 comprising a nucleotide sequence according to (e).

260. (New) The nucleic acid molecule of claim 254 comprising a nucleotide sequence according to (f).

261. (New) The nucleic acid molecule of claim 254 comprising a nucleotide sequence according to (g).

262. (New) The nucleic acid molecule of claim 254 comprising a nucleotide sequence according to (h).

263. (New) The nucleic acid molecule of claim 254 comprising a nucleotide sequence according to (i).

264. (New) The nucleic acid molecule of claim 254 comprising a nucleotide sequence heterologous to SEQ ID NO:3.

265. (New) The nucleic acid molecule of claim 264, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to SEQ ID NO:4.

266. (New) The nucleic acid molecule of claim 265, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

267. (New) A recombinant vector comprising the nucleic acid molecule of claim 254.

268. (New) The recombinant vector of claim 267, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

269. (New) A recombinant host cell comprising the vector of claim 267.

270. (New) A recombinant host cell comprising the nucleic acid molecule of claim 254 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

271. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 254(a)-(h), comprising:

(a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and

(b) recovering said polypeptide from the culture.

272. (New) A composition comprising the nucleic acid molecule of claim 254 and a pharmaceutically acceptable carrier.

✓ 273. (New) An isolated nucleic acid molecule comprising a nucleotide sequence encoding at least 30 contiguous amino acids of SEQ ID NO:4

274. (New) The isolated nucleic acid molecule of claim 273 wherein the nucleotide sequence encodes at least 50 contiguous amino acids of SEQ ID NO:4.

✓ 275. (New) An isolated nucleic acid molecule comprising a nucleotide sequence encoding at least 30 contiguous amino acids of the amino acid residues 31-166 of SEQ ID NO:4.

276. (New) The isolated nucleic acid molecule of claim 275 wherein the nucleotide sequence further comprises a nucleotide sequence heterologous to SEQ ID NO:3.

277. (New) The nucleic acid molecule of claim 276, wherein said heterologous nucleotide sequence encodes a polypeptide heterologous to SEQ ID NO:4.

278. (New) The nucleic acid molecule of claim 277, wherein said heterologous polypeptide is an Fc domain of immunoglobulin.

279. (New) A recombinant vector comprising the nucleic acid molecule of claim 275.

280. (New) The recombinant vector of claim 279, wherein the nucleic acid molecule is operably associated with a regulatory element that controls expression of said nucleic acid molecule.

281. (New) A recombinant host cell comprising the vector of claim 279.

282. (New) A recombinant host cell comprising the nucleic acid molecule of claim 275 operably associated with a regulatory element that controls expression of said nucleic acid molecule.

283. (New) A method of producing a polypeptide encoded by the nucleic acid molecule of claim 275, comprising:

- (a) culturing a host cell comprising said nucleic acid molecule under conditions suitable to produce said polypeptide; and
- (b) recovering said polypeptide from the culture.

284. (New) A composition comprising the nucleic acid molecule of claim 275 and a pharmaceutically acceptable carrier.

✓ 285. (New) An isolated polynucleotide comprising a polynucleotide of SEQ ID NO:1.

✓ 286. (New) An isolated polynucleotide comprising a polynucleotide which encodes the polypeptide of SEQ ID NO:2.

✓ 287. (New) The isolated polynucleotide of SEQ ID NO:1.

✓ 288. (New) The isolated polynucleotide contained in SEQ ID NO:1 which encodes the polypeptide of SEQ ID NO:2.

✓ 289. (New) An isolated polynucleotide comprising a nucleotide sequence that has at least 90% identity to a nucleotide sequence contained in SEQ ID NO:1.

✓ 290. (New) An isolated polynucleotide comprising a nucleotide sequence that has at least 95% identity to a nucleotide sequence contained in SEQ ID NO:1.

✓ 291. (New) An isolated polynucleotide comprising a nucleotide sequence that has at least 90% identity to a nucleotide sequence encoding the polypeptide of SEQ ID NO:2.

✓ 292. (New) An isolated polynucleotide comprising a nucleotide sequence that has at least 95% identity to a nucleotide sequence encoding the polypeptide of SEQ ID NO:2.

✓ 293. (New) The polynucleotide which is the RNA transcript of SEQ ID NO:1.

✓ 294. (New) The isolated polynucleotide which is the RNA transcript of the coding region of SEQ ID NO:1.

295. (New) An isolated polynucleotide which is complementary to the polynucleotide of claim 285.

296. (New) An isolated polynucleotide which is complementary to the polynucleotide of claim 286.

297. (New) An isolated polynucleotide which is complementary to the polynucleotide of claim 287.

298. (New) An isolated polynucleotide which is complementary to the polynucleotide of claim 288.

299. (New) An isolated polynucleotide which is complementary to the polynucleotide of claim 293.

300. (New) An isolated polynucleotide which is complementary to the polynucleotide of claim 294.

301. (New) The isolated polynucleotide of claim 286 which is DNA or RNA.

*Sub D9* 302. (New) A DNA or RNA molecule comprising an expression vector wherein said expression vector is capable of producing a TR6 $\alpha$  polypeptide of SEQ ID NO:2 wherein said expression vector comprises a polynucleotide which encodes the polypeptide of SEQ ID NO:2 and a control region operatively linked to said polynucleotide, when said expression vector is present in a compatible host cell.

303. (New) A host cell comprising the expression vector of claim 302.

*Sub 10* 304. (New) A process for producing a TR6 $\alpha$  polypeptide comprising culturing a host of claim 303 and under conditions sufficient for the production of said polypeptide and recovering said polypeptide from the culture.

305. (New) A process for producing a cell which produces a TR6 $\alpha$  polypeptide comprising transforming or transfecting a host cell with the expression vector of claim 302 such that the host cell, under appropriate culture conditions, produces said polypeptide. --